SERVICE MANUAL
Level 1&2

NOKIA X3

RM-540

Transceiver characteristics

Band:
GSM Quadband 850/900/1800/1900 Mhz

Display:
2.2" Active TFT, 262K colors, 240x320 pixel resolution

Camera:
3.2 MPix CMOS, 4x zoom, Extended depth of field (EDOF)

Operating System:
S40 6th Edition

Connections:
USB 2.0 (micro USB), Bluetooth 2.1 + EDR + A2DP + AVRCP, 3.5mm stereo headphone plug

Transceiver with BL-4CT battery pack

Talk time	Standby
GSM: Up to 7.5 hours	**GSM:** Up to 380 hours

Note:
Talk times are dependant on network parameters and phone settings

Confidential | Copyright © 2009 Nokia | All rights reserved

Table of contents

1. Change history 3
2. Copyright 4
3. Warnings and cautions 5
3.1 Warnings 5
3.2 Cautions 5
4. ESD protection 6
5. Care and maintenance 7
6. Battery information 8
7. Exploded view 9
8. Service devices 10
9. Software update 11
10. Disassembly instructions 12
11. Assembly hints 19
12. Solder components 20

Confidential | Copyright © 2009 Nokia | All rights reserved

1. CHANGE HISTORY

Status	Version No.	Date	Comments
Approved	1.0	9.10.2009	First approved version

The purpose of this document is to help Nokia service levels 1 and 2 workshop technicians to carry out service to Nokia products. This Service Manual is to be used only by authorized Nokia service suppliers, and the content of it is confidential. Please note that Nokia provides also other guidance documents (e.g. Service Bulletins) for service suppliers, follow these regularly and comply with the given instructions.

While every endeavor has been made to ensure the accuracy of this document, some errors may exist. If you find any errors or if you have further suggestions, please notify Nokia using the address below:

Nokia Care Academy
mailto:Service.Manuals@Nokia.com

Please keep in mind also that this documentation is continuously being updated and modified, so watch always out for the newest version.

Confidential | Copyright © 2009 Nokia | All rights reserved

2. COPYRIGHT

Copyright © 2009 Nokia. All rights reserved.

Reproduction, transfer, distribution or storage of part or all of the contents in this document in any form without the prior written permission of Nokia is prohibited.

Nokia, Nokia Connecting People, and Nokia X and Y are trademarks or registered trademarks of Nokia Corporation. Other product and company names mentioned herein may be trademarks or tradenames of their respective owners.

Nokia operates a policy of continuous development. Nokia reserves the right to make changes and improvements to any of the products described in this document without prior notice.

Under no circumstances shall Nokia be responsible for any loss of data or income or any special, incidental, consequential or indirect damages howsoever caused.

The contents of this document are provided “as is”. Except as required by applicable law, no warranties of any kind, either express or implied, including, but not limited to, the implied warranties of merchantability and fitness for a particular purpose, are made in relation to the accuracy, reliability or contents of this document. Nokia reserves the right to revise this document or withdraw it at any time without prior notice.

The availability of particular products may vary by region.

IMPORTANT

This document is intended for use by qualified service personnel only.

3. WARNINGS AND CAUTIONS

Please refer to the phone's user guide for instructions relating to operation, care and maintenance including important safety information. Note also the following:

3.1 Warnings

1. CARE MUST BE TAKEN ON INSTALLATION IN VEHICLES FITTED WITH ELECTRONIC ENGINE MANAGEMENT SYSTEMS AND ANTI–SKID BRAKING SYSTEMS. UNDER CERTAIN FAULT CONDITIONS, EMITTED RF ENERGY CAN AFFECT THEIR OPERATION. IF NECESSARY, CONSULT THE VEHICLE DEALER/MANUFACTURER TO DETERMINE THE IMMUNITY OF VEHICLE ELECTRONIC SYSTEMS TO RF ENERGY.

2. THE HANDPORTABLE TELEPHONE MUST NOT BE OPERATED IN AREAS LIKELY TO CONTAIN POTENTIALLY EXPLOSIVE ATMOSPHERES, EG PETROL STATIONS (SERVICE STATIONS), BLASTING AREAS ETC.

3. OPERATION OF ANY RADIO TRANSMITTING EQUIPMENT, INCLUDING CELLULAR TELEPHONES, MAY INTERFERE WITH THE FUNCTIONALITY OF INADEQUATELY PROTECTED MEDICAL DEVICES. CONSULT A PHYSICIAN OR THE MANUFACTURER OF THE MEDICAL DEVICE IF YOU HAVE ANY QUESTIONS. OTHER ELECTRONIC EQUIPMENT MAY ALSO BE SUBJECT TO INTERFERENCE.

3.2 Cautions

1. Servicing and alignment must be undertaken by qualified personnel only.

2. Ensure all work is carried out at an anti–static workstation and that an anti–static wrist strap is worn.

3. Use only approved components as specified in the parts list.

4. Ensure all components, modules screws and insulators are correctly re–fitted after servicing and alignment.

5. Ensure all cables and wires are repositioned correctly

Confidential | Copyright © 2009 Nokia | All rights reserved

4. ESD PROTECTION

Nokia requires that service points have sufficient ESD protection (against static electricity) when servicing the phone.

Any product of which the covers are removed must be handled with ESD protection. The SIM card can be replaced without ESD protection if the product is otherwise ready for use.

To replace the covers ESD protection must be applied.

All electronic parts of the product are susceptible to ESD. Resistors, too, can be damaged by static electricity discharge.

All ESD sensitive parts must be packed in metallized protective bags during shipping and handling outside any ESD Protected Area (EPA).

Every repair action involving opening the product or handling the product components must be done under ESD protection.

ESD protected spare part packages MUST NOT be opened/closed out of an ESD Protected Area.

For more information and local requirements about ESD protection and ESD Protected Area, contact your local Nokia After Market Services representative.

Confidential | Copyright © 2009 Nokia | All rights reserved

5. CARE AND MAINTENANCE

This product is of superior design and craftsmanship and should be treated with care. The suggestions below will help you to fulfil any warranty obligations and to enjoy this product for many years.

- Keep the phone and all its parts and accessories out of the reach of small children.
- Keep the phone dry. Precipitation, humidity and all types of liquids or moisture can contain minerals that will corrode electronic circuits.
- Do not use or store the phone in dusty, dirty areas. Its moving parts can be damaged.
- Do not store the phone in hot areas. High temperatures can shorten the life of electronic devices, damage batteries, and warp or melt certain plastics.
- Do not store the phone in cold areas. When it warms up (to its normal temperature), moisture can form inside, which may damage electronic circuit boards.
- Do not drop, knock or shake the phone. Rough handling can break internal circuit boards.
- Do not use harsh chemicals, cleaning solvents, or strong detergents to clean the phone.
- Do not paint the phone. Paint can clog the moving parts and prevent proper operation.
- Use only the supplied or an approved replacement antenna. Unauthorised antennas, modifications or attachments could damage the phone and may violate regulations governing radio devices.

All of the above suggestions apply equally to the product, battery, charger or any accessory.

Confidential | Copyright © 2009 Nokia | All rights reserved

6. BATTERY INFORMATION

Note: A new battery's full performance is achieved only after two or three complete charge and discharge cycles! The battery can be charged and discharged hundreds of times but it will eventually wear out.

When the operating time (talk-time and standby time) is noticeably shorter than normal, it is time to buy a new battery. Use only batteries approved by the phone manufacturer and recharge the battery only with the chargers approved by the manufacturer.

Unplug the charger when not in use. Do not leave the battery connected to a charger for longer than a week, since overcharging may shorten its lifetime.

If left unused a fully charged battery will discharge itself over time Temperature extremes can affect the ability of your battery to charge.

For good operation times with Ni-Cd/NiMh batteries, discharge the battery from time to time by leaving the product switched on until it turns itself off (or by using the battery discharge facility of any approved accessory available for the product).

Do not attempt to discharge the battery by any other means Use the battery only for its intended purpose.

Never use any charger or battery which is damaged.

Do not short-circuit the battery. Accidental short-circuiting can occur when a metallic object (coin, clip or pen) causes direct connection of the + and - terminals of the battery (metal strips on the battery) for example when you carry a spare battery in your pocket or purse. Shortcircuiting the terminals may damage the battery or the connecting object.

Leaving the battery in hot or cold places, such as in a closed car in summer or winter conditions, will reduce the capacity and lifetime of the battery. Always try to keep the battery between 15°C and 25°C (59°F and 77°F).

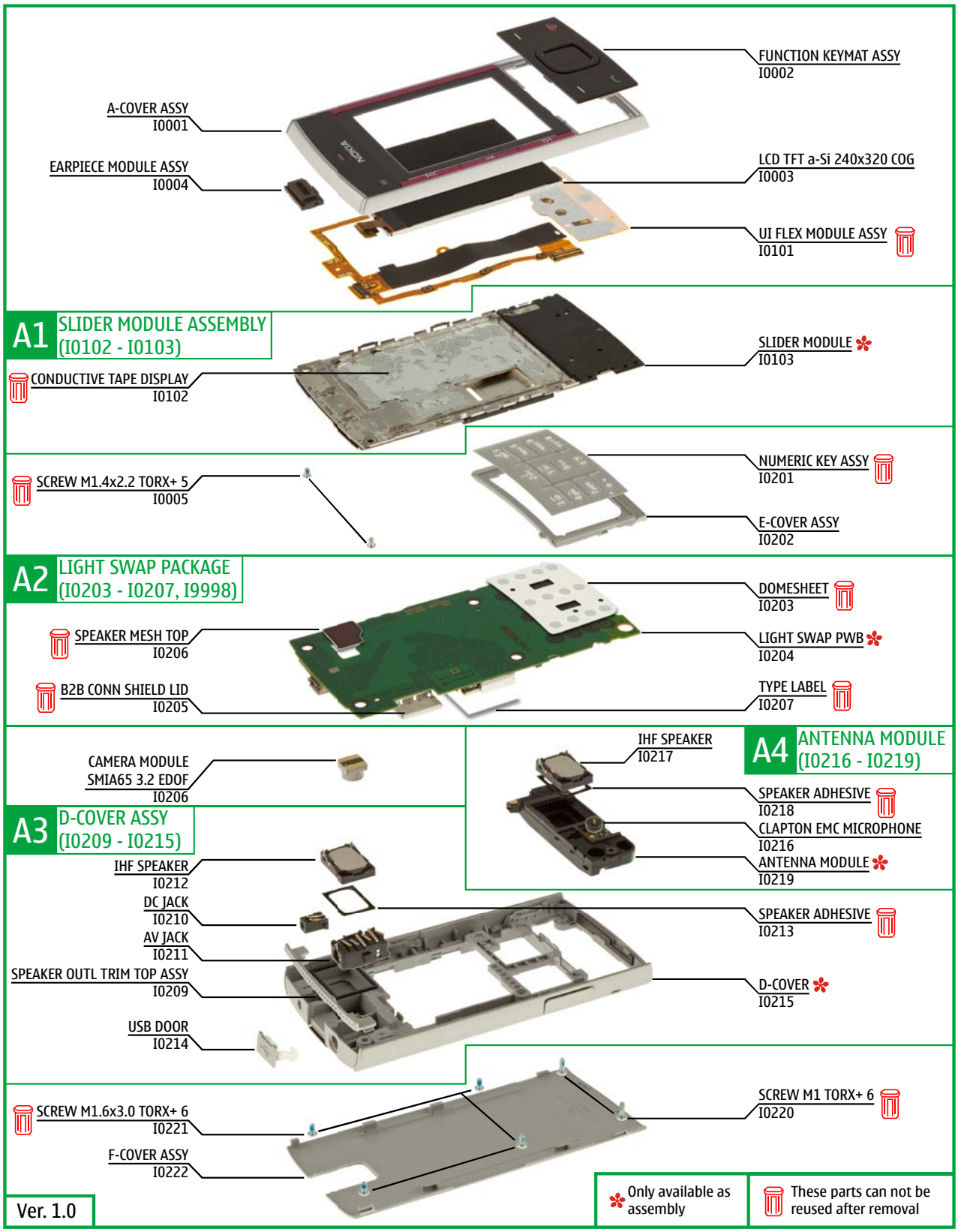
A phone with a hot or cold battery may temporarily not work, even when the battery is fully charged. Batteries' performance is particularly limited in temperatures well below freezing.

Do not dispose batteries in a fire! Dispose of batteries according to local regulations (e.g. recycling).

Do not dispose as household waste.

Confidential | Copyright © 2009 Nokia | All rights reserved

7. EXPLODED VIEW



Confidential | Copyright © 2009 Nokia | All rights reserved

8. SERVICE DEVICES

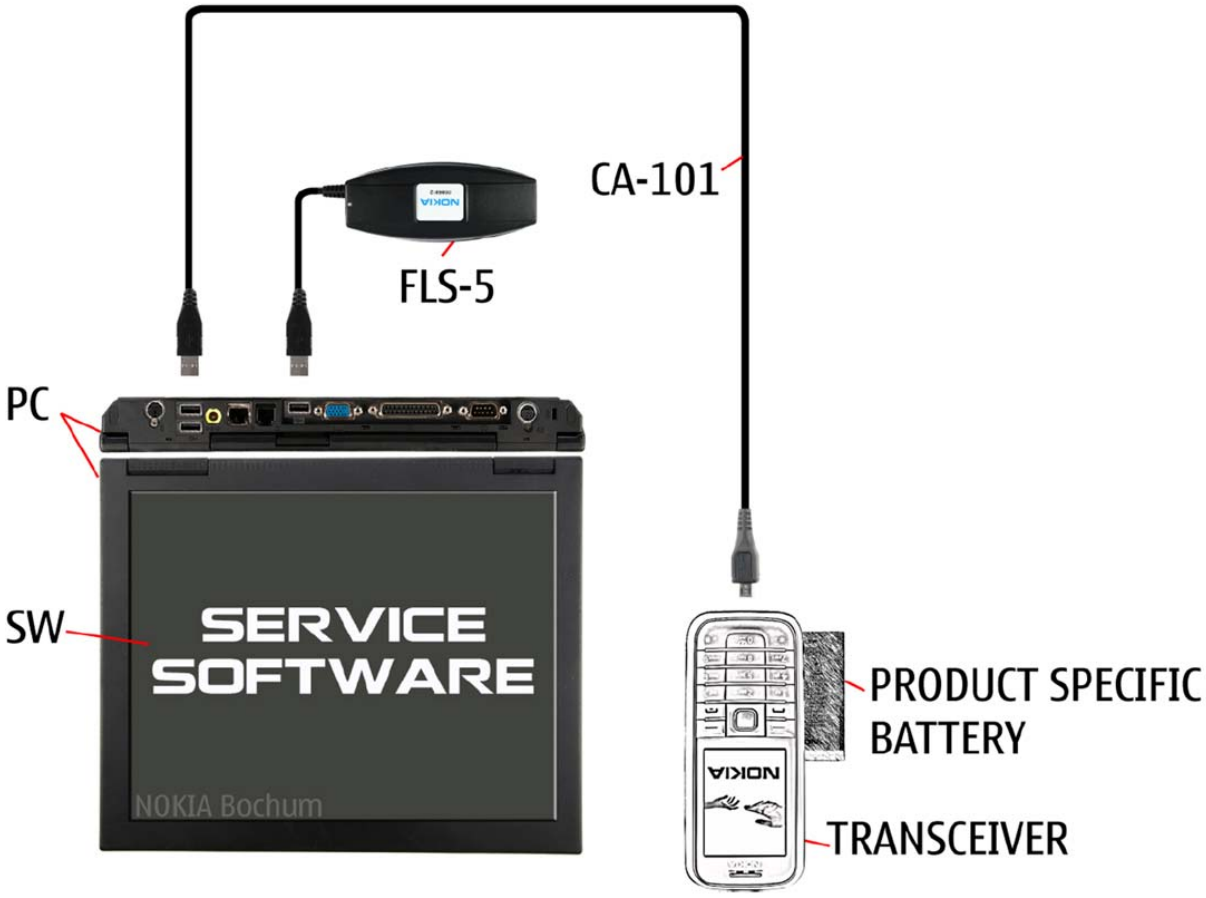
FLS-5 Flash Device	CA-101 Service Cable	SS-88 Camera Removal tool
AC-8 Travel Charger	BL-4CT Battery	**NMP standard toolkit (v2)** For more information, refer to the Service Bulletin (SB-011) on Nokia Online. Supplier or manufacturer contacts for tool re-order can be found in "Recommended service equipment" document on Nokia Online.

Confidential | Copyright © 2009 Nokia | All rights reserved

9. SOFTWARE UPDATE

Flash concept – Point of Sale (POS)

To use the FLS-5 Flash Dongle, follow the user guide inside the sales package.
Please check always for the latest version of flash software available on Nokia Online (NOL).



Confidential | Copyright © 2009 Nokia | All rights reserved

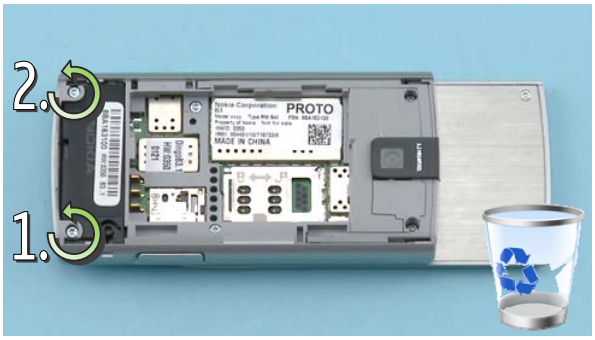
10. DISASSEMBLY INSTRUCTIONS

1) Nokia X3 disassembly.

2) For disassembling you need the Nokia Standard Tool kit version 2 plus the camera removal tool SS-88. You will also need a DC and an AV plug.

3) Slide the phone open and release the battery cover.

4) Remove the battery cover. If there is a battery inserted, remove it also.

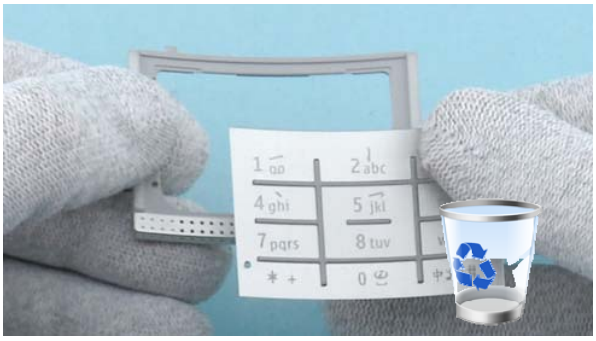


4) Unscrew the two TORX+ size 6 screws in the order shown. Do not use them again. Discard them.

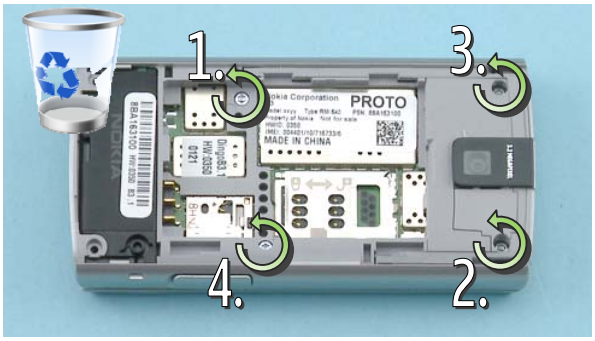
6) Use the SRT-6 to release the NUMERIC KEYMAT ASSY and the E-COVER ASSY.

Confidential | Copyright © 2009 Nokia | All rights reserved

7) Remove the NUMERIC KEYMAT ASSY and the E-COVER ASSY as shown.



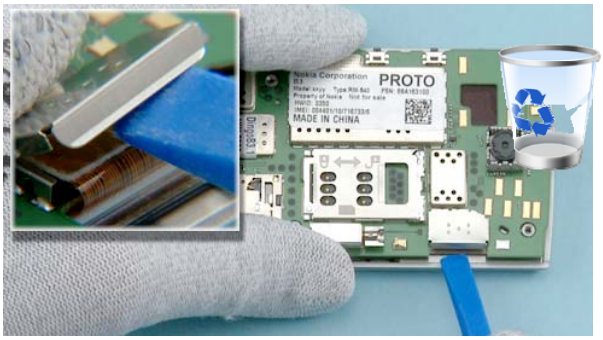
8) Then separate the NUMERIC KEYMAT ASSY from the E-COVER ASSY. The NUMERIC KEYMAT ASSY must always be renewed.



9) Unscrew the four TORX+ size 6 screws in the order shown. Do not use them again. Discard them.

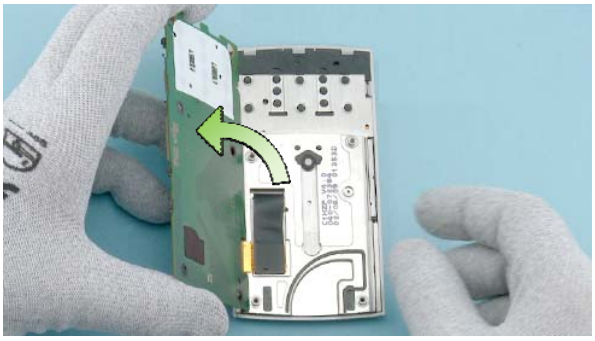
10) Before removing the D-COVER ASSY, open the USB DOOR.

11) Release the D-COVER ASSY as shown.



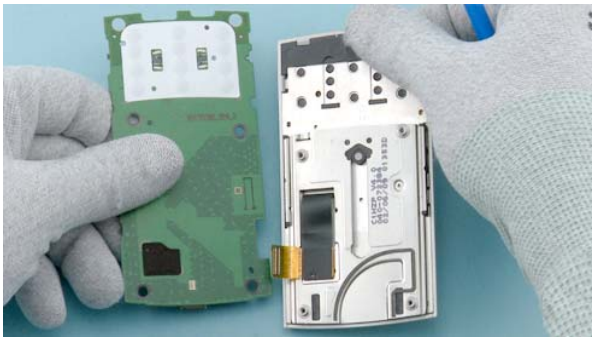
12) Use the SS-93 to carefully lift up the board to board connector SHIELD LID. The board to board connector SHIELD LID has to be always renewed.

Confidential | Copyright © 2009 Nokia | All rights reserved

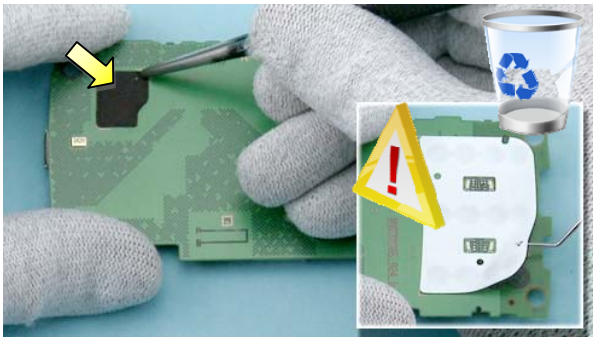


13) Turn over the engine board.

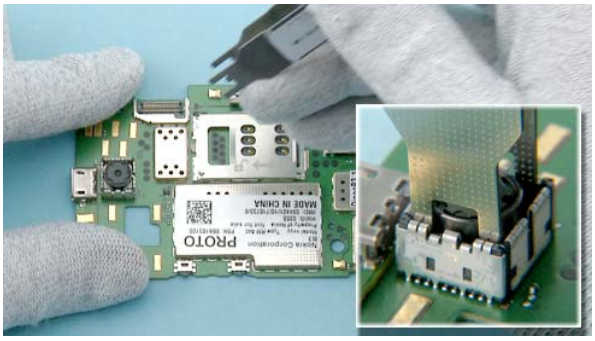
14) Disconnect the UI FLEX connector with the SS-93. Be careful not to damage the connector or any nearby components.



15) The engine board and the SLIDE MODULE can be now separated.



16) Use the tweezers to peel off the SPEAKER MESH. Detach the corner of the DOMESHEET with the dental tool and then peel off the DOMESHEET. Be aware of the sharp point of the dental tool - be careful not to injure yourself.
Do not use the SPEAKER MESH and DOMESHEET again.

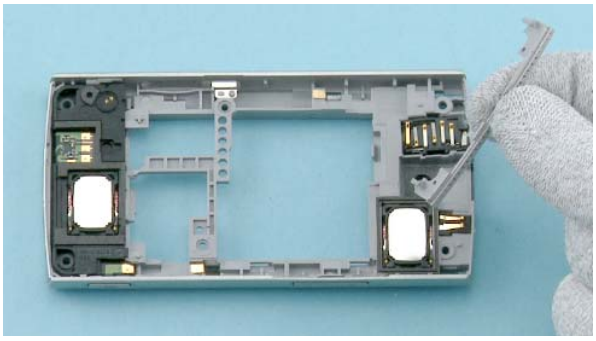


17) Use the camera removal tool SS-88 to detach the CAMERA.

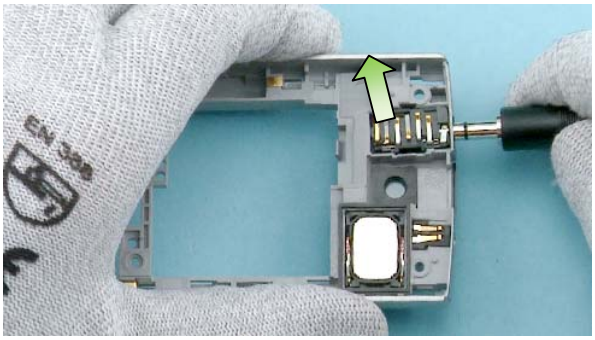
18) Pull out the USB DOOR.

Confidential | Copyright © 2009 Nokia | All rights reserved

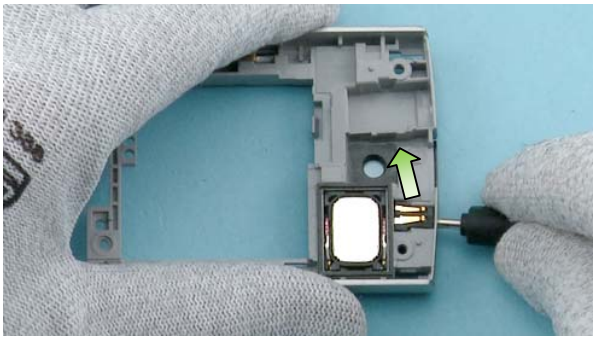
19) Use the tweezers to carefully release the clip holding the SPEAKER OUTL TRIM TOP ASSY.



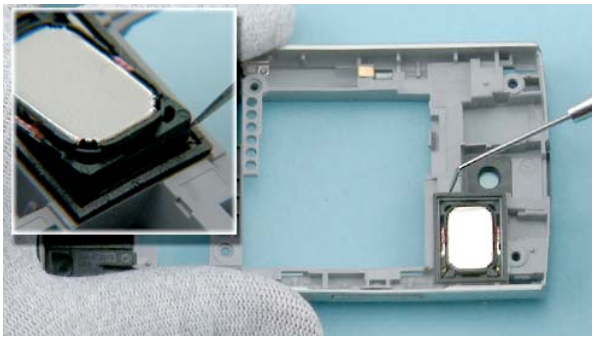
20) Detach the SPEAKER OUTL TRIM TOP ASSY.



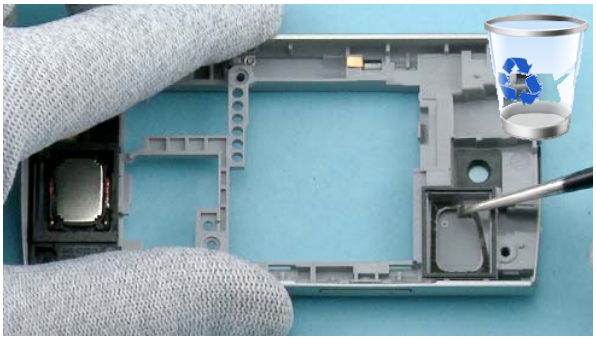
21) Lift up the AV jack with an AV plug and remove the AV jack with the tweezers.



22) Release the DC jack with a DC plug. Use the tweezers to remove the DC jack.



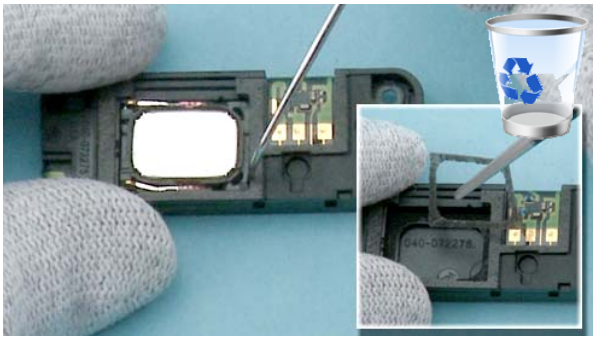
23) Lift up the IHF SPEAKER with the dental tool and remove the speaker with the tweezers.



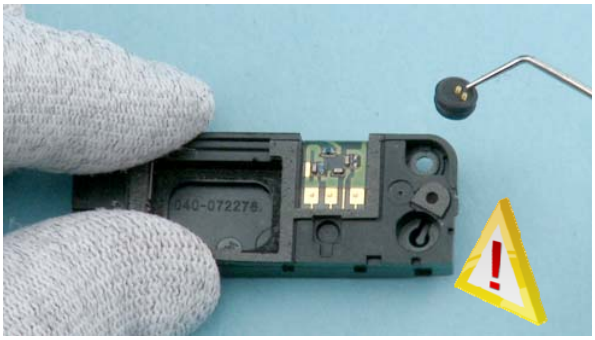
24) Remove the SPEAKER ADHESIVE with the tweezers. Do not use the adhesive again. Discard it.

Confidential | Copyright © 2009 Nokia | All rights reserved

25) Use the SS-93 to release the ANTENNA MODULE. Press the ANTENNA MODULE lightly through the D-COVER.

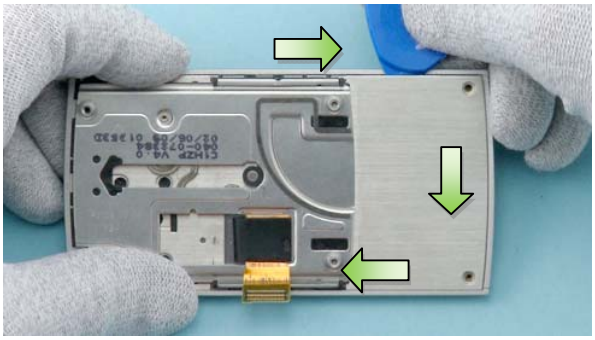


26) Lift up the IHF SPEAKER with the dental tool and remove the speaker with the tweezers. Remove the SPEAKER ADHESIVE with the tweezers. Do not use the adhesive again. Discard it.



27) Use the dental tool to carefully lift up the MICROPHONE.

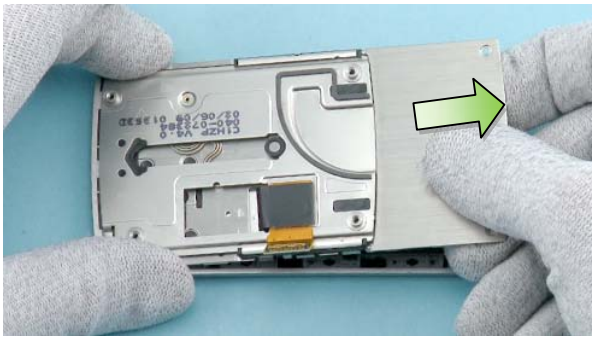
28) Make sure the slide is positioned as shown in the picture. Unscrew the two TORX+ size 5 screws in the order shown. Do not use them again. Discard them.



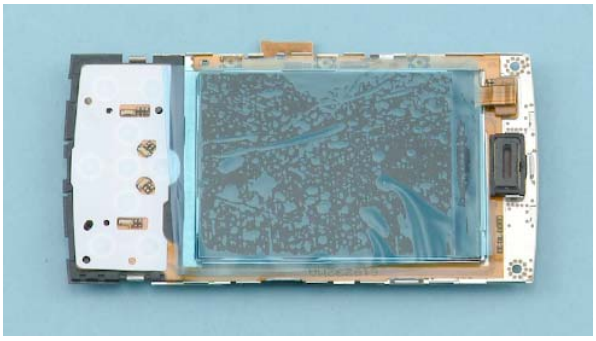
29) Insert the SRT-6 between the A-COVER ASSY, and the SLIDE MODULE ASSEMBLY. Slide the SRT-6 along the edges to release the clips holding the A-COVER ASSY.

30) Make sure all the clips are released.

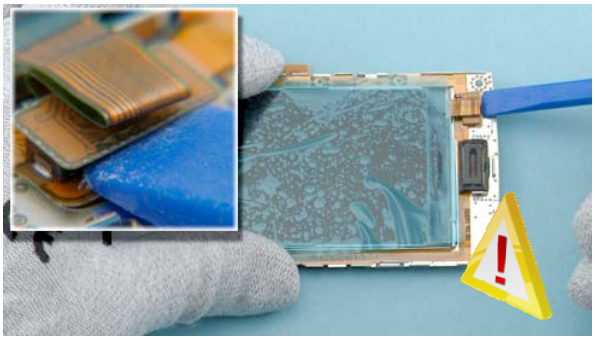
Confidential | Copyright © 2009 Nokia | All rights reserved



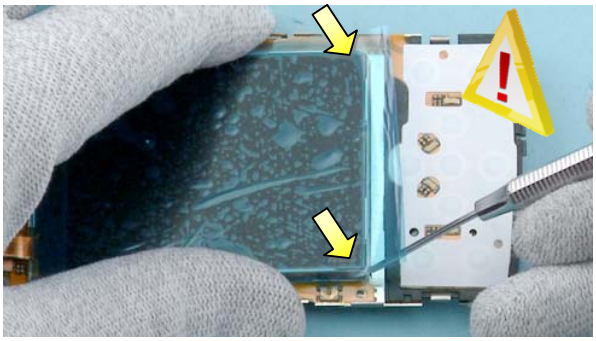
31) Remove the SLIDE MODULE ASSEMBLY in the direction shown.



32) Protect the LCD with protective film.

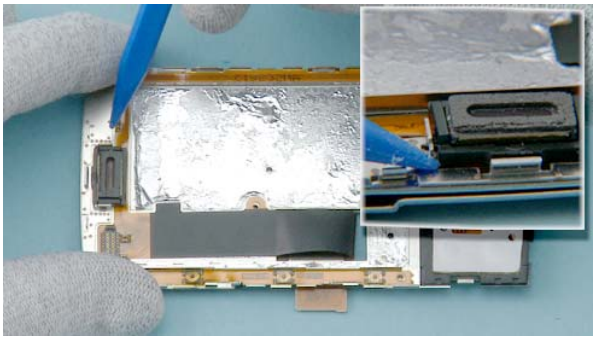


33) Use the SS-93 to open the LCD CONNECTOR. While opening the connector be careful not to damage it.



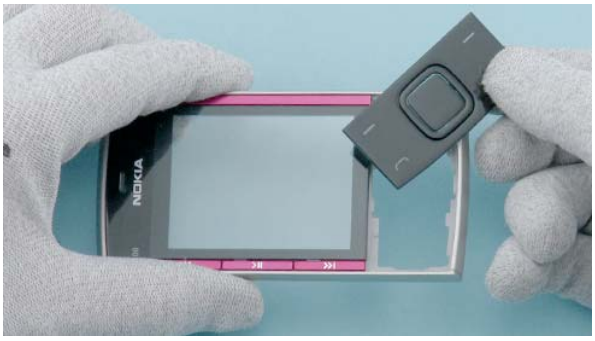
34) Use the dental tool to slightly lift up the LCD. Be very careful not to break the LCD!

35) Use the SS-93 to loosen the adhesive underneath the LCD. Then lift up the LCD.

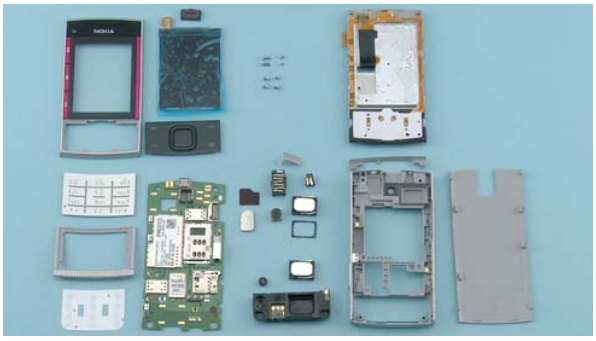


36) Use the sharp end of the SS-93 to release the EARPIECE. Remove the EARPIECE with the tweezers.

Confidential | Copyright © 2009 Nokia | All rights reserved



37) Separate the FUNCTION KEYMAT ASSY from the A-COVER ASSY.

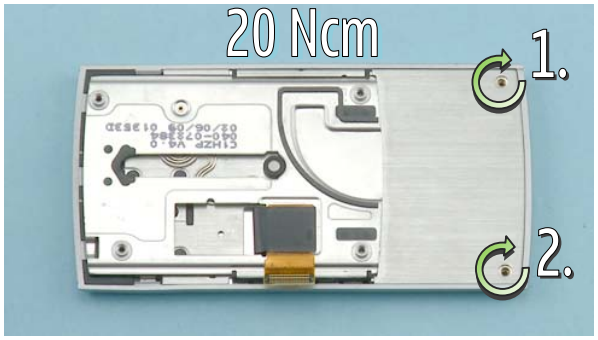


38) Nokia X6 disassembly is now complete.

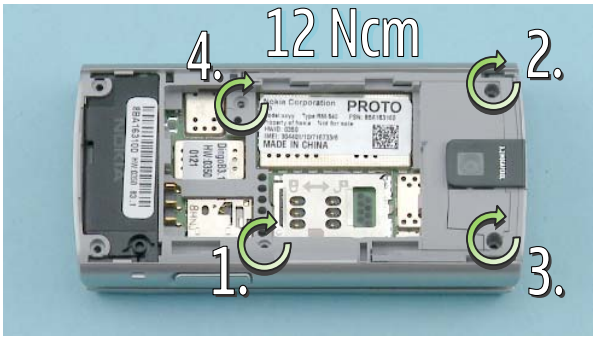
- END OF DISASSEMBLY-

Confidential | Copyright © 2009 Nokia | All rights reserved

11. ASSEMBLY HINTS



1) Tighten the two TORX+ size 5 screws to the torque of 20 Ncm in the order shown.



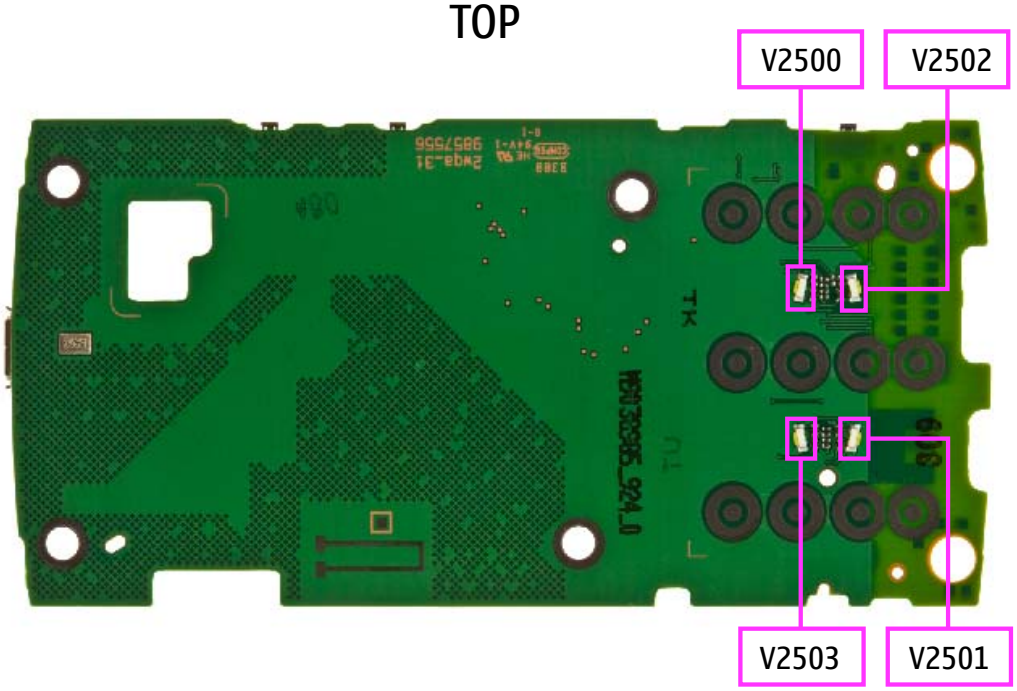
2) Tighten the four TORX+ size 6 screws to the torque of 12 Ncm in the order shown.

3) Tighten the two TORX+ size 6 screws to the torque of 18 Ncm in the order shown.

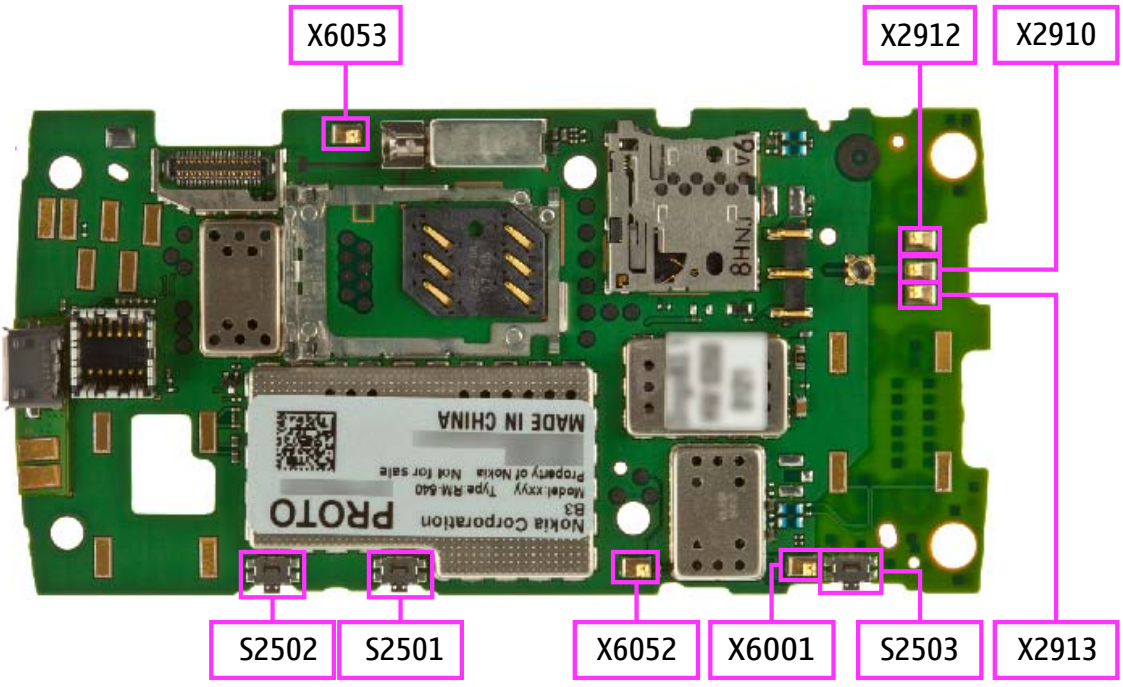
Confidential | Copyright © 2009 Nokia | All rights reserved

12. SOLDER COMPONENTS

TOP



BOTTOM



Ver. 1.0

Confidential | Copyright © 2009 Nokia | All rights reserved